

FOREST INSECT CONDITIONS ON THE
BOISE NATIONAL FOREST - 1969

This report is a record of major insect conditions on the Boise National Forest in 1969. Information for this report was compiled from aerial detection surveys, on-the-ground biological evaluations, and of specific infestation centers, or potential problem areas reported by the Forest staff. Any questions or comments concerning this report should be directed to the Boise Zone Office.

With the exception of the Douglas-fir and mountain pine beetle, overall insect activity on the Forest could be classified as moderate. Heavy losses continued in Douglas-fir stands along tributaries of the Middle and North Forks of the Boise River and South Fork of the Payette River above Garden Valley. Increasing mortality of lodgepole pine attacked by the mountain pine beetle was recorded in Tripod Meadows, lower Queens River, Graham airstrip, Trinity Creek, and upper Deadwood River. A significant Forest-wide decrease in Ips activity was observed during aerial detection flights in second-growth ponderosa pine. The western pine beetle continues to kill three-to-ten-tree groups of ponderosa pine. On the Experimental Forest in Bear Run, Ips continued to build up in dense, overstocked stands of second-growth ponderosa pine in conjunction with mountain and western pine beetles. A decrease in defoliation intensity by spruce budworm in the Primitive Area was observed, except for increased defoliation in Marble Creek. A wider distribution of tussock moth feeding on Ceanothus sp. was observed this season. Defoliation intensity varied considerably depending upon host availability and the impact of a native polyhedrosis virus. Tent caterpillars caused moderate defoliation to cherry, bitterbrush, and aspen in widely scattered locations on the Forest. Pith mining by an unknown insect was detected in the terminals of ponderosa pine reproduction. Infested material was collected and examined but laboratory rearing was unsuccessful and identification of the insect remains unknown.

DOUGLAS-FIR BEETLE - Dendroctonus pseudotsugae Hopk.

Periodically epidemics of the Douglas-fir beetle have been observed in southern Idaho. From 1959 through 1962, this destructive insect caused heavy losses to large sawtimber on the Boise, Payette, and Sawtooth National Forests. This epidemic terminated abruptly due to adverse natural factors.

During the winter of 1964-1965, unseasonable rains caused rapid snowmelt and soil instability. This was followed by heavy wet snows and winds which felled thousands of Douglas-firs. These trees provided excellent habitat for beetles and since that time losses to standing trees have increased at an alarming rate. Currently, the Douglas-fir beetle is epidemic throughout most fir stands on the Forest.

Aerial surveys in 1969 revealed several hundred dead tree groups ranging from five trees to a hundred or more per group. Since this beetle prefers the larger trees, losses are occurring to high-value sawtimber.

There is no question that current losses to the Douglas-fir beetle are at intolerable levels. An example of this can be drawn from the fact that the Atlanta Ranger District, which has an annual allowable cut of 4 MM bd.ft., lost an estimated 7 MM bd.ft., of Douglas-fir in 1968-1969. Biological evaluation of attack centers on the Atlanta and adjacent Ranger Districts indicated continuing high losses through 1970.

The seriousness of the Douglas-fir beetle problem was graphically outlined in the September meeting of the Forest Pest Action Council held in Boise. During this time a Douglas-fir Beetle Action Committee was formed to explore the immediate and long-range goals in combatting the beetle. A meeting of this committee was called in November to discuss ideas and review planning for dealing with the Douglas-fir beetle problem.

It was the consensus of the Douglas-Fir Beetle Action Committee that the following action be taken:^{1/} (1) Immediately set up procedures to salvage log as much beetle infested timber as possible, (2) establish several trap tree areas along existing transportation routes where one or two truck loads per location could be made up. Trap areas would be in or adjacent to currently active infestation centers, and (3) endorse a cooperative Forest Service, Boyce-Thompson Institute Study for determining the effectiveness of the bark beetle attractant frontalin.

Once again, as in the winter of 1964-1965, unseasonably warm frontal systems brought rains and extremely heavy, wet snows to southwestern Idaho. At the time this report is being written, storms are still in progress and it is known that some damage has already occurred in the form of top breakage and felling of snow laden trees. If damage of this type continues, it may add to the already serious Douglas-fir beetle problem.

Due to the fact that future storms could compound the problem, no damage surveys will be undertaken until early in the spring. After completion of damage surveys, a special report with our findings will be written.

MOUNTAIN PINE BEETLE - *Dendroctonus ponderosae* Hopk.

For the most part losses in lodgepole pine caused by mountain pine beetle activity have been minimal in the past few years. However, an aggressive infestation of

^{1/} Douglas-fir beetle Action Committee composed of Private (Industry), State, and Federal Land Managers.

this beetle is building up rapidly in the vicinity of Tripod Meadows, Emmett Ranger District. The infested lodgepole pine is in an isolated basin of timber, surrounded on the west by a mixture of Douglas-fir and true firs with the remaining boundary areas consisting of ponderosa pine, true firs and larch.

In 1968 small 5-to-20-tree groups of dead lodgepole pine were observed. Subsequent examination of the mature-overmature stands revealed mountain pine beetle activity. During the 1969 aerial surveys, observers found a substantial increase in numbers of faded trees, and ground evaluations determined the beetle was definitely on the increase.

Lodgepole stands adjacent to Tripod Meadows were cruised by District personnel in preparation for a sale. In addition to regular cruise data, 227 special variable cruise plots were established for collecting infested stand data.

Analysis of data showed the following:

| | |
|-------------------------|--------------------------------------|
| Green Stems Per Acre | 65.4 |
| New Attacks (1969)/Acre | 9.9 |
| Old Attacks (1968)/Acre | 1.3 |
| Snags-Older Dead/Acre | <u>1.5</u> |
| Total | 78.1 Trees/Acre 10" d.b.h. & larger. |

A total of 12.7 trees per acre has been killed to date, which represents approximately 14 percent of the total stand. Survey data shows a current build-up ratio of 7.6:1.0. Broods appeared healthy and numerous at the time of evaluation, and it is predicted that losses will increase at an accelerated rate unless some form of suppression is undertaken.

After the cruise was completed and biological evaluation data gathered and discussed with them, Boise National Forest personnel decided to log the area.

Mountain pine beetle activity in second-growth ponderosa pine on private lands continued southeast of Cascade, Idaho. A survey of this infestation was made by Idaho Department of Public Lands and Boise Cascade Corporation personnel in February 1969. Approximately 11,000 trees were infested at that time. Evaluation of overwintering broods showed good survival and it was predicted that the infestation would continue. Followup evaluations indicate that continued losses are to be expected in ponderosa pine stands near Warner's Pond.

Fading of approximately 200-250 lodgepole pines was observed in Whiskey Jack Cr., Mountain Home Ranger District. This infestation appeared to decline in intensity from what was observed in 1968. Work scheduling did not permit ground evaluations; however, the area will be kept under surveillance and any change in status will be reported when and if it occurs.

PINE ENGRAVER - Ips spp.

Ips activity as observed during mid-summer aerial detection flights was nominal this year. Recorded group killing was predominantly associated with sale areas where considerable volumes of ponderosa pine had been felled. The most significant Ips activity was found on the Experimental Forest in Bear Run. Excessive winter damage in stagnated, dense, overstocked stands of second-growth ponderosa pine, provided an abundance of suitable host material. First generation Ips readily attacked the damaged trees and as a result heavy second generation broods developed. Emerging adults attacked standing trees and by late summer many faded groups of trees could be found. Evaluation of these areas showed mountain pine and western pine beetles associated with the Ips. It was impossible to tell which of the three beetles made the initial attacks. However, since Ips are usually regarded as secondary, it is assumed that they followed attacks of the mountain and western pine beetles.

To date these infestations have not shown a tendency to build to epidemic levels. At this time, we expect some continued beetle activity; at least through the 1970 field season.

SPRUCE BUDWORM - Choristoneura fumiferana complex.

Marked reduction in the intensity of defoliation by spruce budworm was recorded in the Primitive Area this year. Although the persistent infestation in Marble Creek increased some 3,500 acres in area, only 1,500 acres of heavy defoliation was observed around the Cameron Ranch. This was the only infestation in the Salmon River drainage that did not show a reduction in area this year as was observed in the neighboring Challis, Payette, and Salmon National Forests. Several areas of light defoliation in Pistol, Garden and Indian Creeks recorded during last year's aerial surveys did not show visual damage this year.

Defoliated acreage by intensity class on the Forest during the past seven years is as follows:

Defoliation Intensity

| <u>Year</u> | <u>Light</u> | <u>Moderate</u> | <u>Heavy</u> | <u>Total</u> |
|-------------|--------------|-----------------|--------------|--------------|
| 1963 | 2,400 | 10,080 | 43,680 | 56,160 |
| 1964 | 20,800 | 28,800 | 24,000 | 73,600 |
| 1965 | - | - | 60,200 | 60,200 |
| 1966 | 56,800 | 2,600 | - | 59,400 |
| 1967 | 25,100 | 3,800 | - | 28,900 |
| 1968 | 12,440 | 11,560 | 3,680 | 27,680 |
| 1969 | 21,500 | 8,000 | 1,500 | 31,000 |

It is interesting to note that all 60,200 acres of defoliation recorded in 1965 were classified as heavy. However, light feeding characterized damage in 1966 and 1967. The following year light and moderate defoliation was observed.

TUSSOCK MOTH - Orgyia vetusta gulosa (Hy.Edw)

A considerable reduction in feeding damage was observed on all host plants of this insect in Town Creek this season. Newly hatched larvae were observed migrating from egg mass deposition sites on plantation ponderosa pine back to their preferred host Ceanothus sp. before feeding commenced. A native polyhedrosis virus which has caused heavy larval mortality in the past, manifested itself this year and killed caterpillars in the late larval instars. Larval death became most pronounced after considerable defoliation of the broadleaved species and as a result, migration to, and feeding on, reproduction of ponderosa pines was nominal.

In the past, considerable confusion has centered around what procedures are to be followed when a potentially serious insect infestation is detected. Procedures are spelled out in the F.S.M. (5200 series) and supplements to parent material. We feel that the manual directives are sufficient; however, it may be helpful if procedures were outlined in a more or less simplified manner. With this in mind, the following is presented for your consideration:

Evidence of insect activity detected.



Fill out 5200-1.

Forest Pest Detection Field Report.

If confused - consult FSM 5221.1 and R-4 Supplement, August 1965, No. 131.

Mail 5200-1, and well prepared specimens

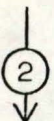
In cases where immediate action

is necessary. Call the Boise

Zone Office, 342-2711, ext. 2345.

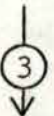
F.T.S. No. 342-2345

To: U.S.F.S. - Division of T.M.
Boise Zone Office
3320 Americana Terrace
Boise, Idaho 83706



Entomologists at the Zone Office will:

1. Acknowledge your report.
2. Determine if a biological evaluation is necessary. In some cases an evaluation may not be necessary as previous knowledge of the problem may have already been documented.



Biological Evaluation of Infestation

When an evaluation is deemed necessary the zone entomologists will:

1. Contact District or staff personnel and set date for evaluation. In many cases it is not necessary for District or staff personnel to accompany entomologists on evaluations unless they so desire.

7 (continued)

2. Make a biological evaluation of the problem area.
3. Prepare a written report to the Forest on biological evaluation findings.

This report may or may not recommend control.

Information in this report will be in sufficient detail so that the land manager can make a GO -- NO GO decision on control.



If the decision is "GO" for control, the following steps should be followed:

1. Forest staff will make a resource evaluation as recommended in FSM 5204.4 R-4 Supplement 33, July 1964.
2. Then the Forest will prepare a 5200-10, Project Proposal and justification statement. This can be at the District or Supervisor's Office level.
3. The completed 5200-10 should be submitted directly to the Boise Zone Office.



A finalized biological evaluation will be prepared by Zone Office personnel. This will be attached to the 5200-10 and both will be sent to the Regional Office.

The same procedures can be shown
in the following diagrammatic form.

DETECTION OF INFESTATION

EVALUATION OF INFESTATION

DECISION FOR CONTROL

GO

NO GO

FOREST PREPARES
5200-10 PROJECT
PROPOSAL AND JUSTI-
FICATION STATEMENT
AS TO WHAT VALUES ARE
THREATENED, HOW CONTROL
ADVANTAGES OUTWEIGH NO
CONTROL, CONSIDER
ECONOMIC AND ENVIRON-
MENTAL ASPECTS. SEE
FSM 5232.1. TRANSMITS
TO ZONE OFFICE.

BOISE ZONE OFFICE PREPARES
BIOLOGICAL EVALUATION
TO SUPPORT PROJECT
PROPOSAL.

INFESTATION KEPT
UNDER SURVEILLANCE.

5200-10 JUSTIFICATION
STATEMENT AND ACCOMPANY-
ING BIO-EVALUATION SUB-
MITTED TO REGIONAL OFFICE.
IF APPROVED -- PROJECT
SUBMITTED TO WASHINGTON
OFFICE.

WASHINGTON OFFICE REVIEW
-- PROJECT APPROVED OR
DISAPPROVED. IF APPROVED --
FINANCING GRANTED.